Technology and contemporary local architecture
(Study in investment and technology transfer impacts on the evolution of the language of contemporary local architecture)

Dr. Hoshyar Qadir Rasul
Assistant Professor
Engineering Technical College
Polytechnic University of Sulaimani
Iraq- KRG
arch.hoshyar@yahoo.com

Abstract:

Architecture as it is a mirror of the era and evidence of its progressing, must reflect all the changes and transformations in political, social and economic life, to achieve this, it is necessary to provide a ground, tools and appropriate means to speak in language of its age, and become that mirror which translates contemporary situations on one hand, and execute to achieve the ambition and visions of the future for individuals and communities on the other hand.

Architecture as a technology and cultural product, cannot -any way- to remain aloof from that fact, and from that new reality. While the technology has being considered as a global phenomenon rumored for all, and derived by everyone, therefore perceived by all, and close to everyone.

Certainly, the main and the crucial port for the transfer of these technologies is investment. That is, due to its broad and fastest domain to enter and transfer technology (with its intellectual and physical parts), to pass the homeland and borders and to close distances, and to occur transformations and desired changes.

There is no doubt that the Iraqi Kurdistan region, -before current crises in security (isis war) and economy, and in recorded time, saw important developments and changes in the urban structure as well as other aspects of life too. Due to this jumped progress, the language of architecture which speak to its age characteristics has produced and totally different from what was rumored previously. This status, requires stopping reinforced by comprehensive and scientific studies.

The study supposed that the attractive investment environment working on occurring jumps and qualitative transformations in architecture and urban development, so at the end, the language of architecture will be affected and changed too. To prove this hypothesis, the study take a number of implemented projects in various building types, to reveal what has been achieved in qualitative shifts in the architectural language at the level of contemporary local architecture .. so to get the main research objective which determined as exploring the role of investment projects in development of the formal language of local architecture.

The study followed the descriptive and analytical methodology to achieve the main goals and to prove the hypothesis also...

The study also, depending on the architectural literature background, includes the concept of investment and its role in the transfer of advanced technologies. Thus how the technology reflects its influences on the evolution of architecture and change the language of local architecture.

Keywords- Investment, technology, Technology transfer, technology and architecture, the language of architecture, evolution of architecture…

I. INTRODUCTION

Architecture is a living organism, evolving with the development of culture and communities, and is subjected to the requirements of the era too. Just as the modern architecture got up with the beginning of the twentieth century in Germany with the development of concrete and glass, at the end of the eighties of the last century, in America and Europe, it has jumped in the succession, legendary and crazy ideas. The evolution of style, concept of the future design and methods of construction changed also synchronously..

Investment has emerged as a concept dealt with more economic studies and in spite of the difference in the expression between the economy and the field of architecture and its mechanisms and means, but participated in an important process in the development of countries.. The process accomplished by transfer technology in its wide meanings.
II. INVESTMENT

The concept of investment affirms on recruiting the capital in order to open the multiple options to the individual and the whole too, through the economic, technical and cultural development.

To perceive the investment, it should be handled as an ideology statement, not to be seen in its physical presence only [1].

So, the process includes many attributes as (capital, ideas, and material) sides..

III. TECHNOLOGY

Technology is the integrated whole entity constitutes of basic main keystones (material, knowledge, technical and conceptual), each of them considered as an important element in technology activation whether in the producing or transferring level [2].

McLuhan termed technology as ‘massaging’ of our ‘sense-ratios’. Technologies, like media, ‘organise, select and focus’ the environment through various transformational structures’. This focal power of technologies has led Borgmann to refer to technologies as ‘focal things’ and the world they thus disclose ‘focal realism’ [3 P.304].

Heidegger argues that technology is not so much a set of tools or instruments, but in fact a worldview which ‘enframes’ us. Our particular enframing is to see the world as resource, as ‘standing reserve’. When we dam a river, we treat the river as a resource to put to human use. All of nature is thus subordinated to human purpose.

Technology considered as a (System), similar to other systems has an entity, ingredients, properties and functions which lies on the rational control of human, material and space [3 p.91].

Technology caused a lot of changes at several levels, whether the change in thought, knowledge, infrastructure, physical media, or change in the final image outputs [4 p.62].

So, the process and in order to take its final shape, should arrive its ending stages, to formulate the final image outputs described as (innovative technology).

A. Technology transfer:

Technology transfer will be completed, while one side, who own the technology, govern the producing and management system, incapable the other side through the tools of certain mastering to start the process independency, rather done without any change or after additions, through any renewable operations.

So the technology transfer: is the process of achieving the advanced technical method in order to use it in different local producing projects, through the agreement with the owner to apply these methods in the projects. The application will to be expanded and tightened due to ability and agreement circumstances [2].

The process of technology transfer should be passed through 3 stages; (transfer, localization, and generalization and innovation), to achieve the cultural renaissance. The absence of each one of these keystones leads to delay in generation and innovation act.

After the technology transfer, It should be to concentrate on the localization process. Because of its consideration as the phase leads to innovation and development, so that the technology and the produced architecture to express the local identity [2].

In this regard David week said that; ‘When we work on building projects together with a community from another culture, each community works to address its everyday, local concerns. They weave building into their way of life. So do we [3 P.380].

So in the process of transferring technology, it should be to draw the local identity (localization), in order to pass to the later stage, to develop this locality in architecture consequently. (fig. no. 1)

B. Investment and Architecture:

Investment is the tool for architecture developing, through affording the suitable circumstance to real estate investment to become more developed by the way of preparing necessities and factors which helped in raising such architecture. In this regard, investment objectives are briefed as: [5]

- contributing to the real estate development of the country.
- Provide building materials and stability in pricing.
- Work in construction and the construction materials industry and contribute to its development.
Language and Architecture:

IV. LANGUAGE – A GENERAL DESCRIPTION

"Language is a system of signs that expresses ideas". A science that studies the life of signs within society and is a part of social and general psychology. Saussure believed that semiotics is concerned with everything that can be taken as a sign, he called it semiology, which means the mental linkage between (concept) and (image sound) [6].

Language is the system that links sounds to meaning or gestures to icon. Language is the human property, it reveals human as thinker and wise beings, through acts as communication, expression and thought, it is also the memory of society and culture. So, language is thought and mind method, reflects the essence of culture....

As a general description of language one can suggest the following set of characteristics: [7]

a) Language is a system of communication.
b) Each act of communication is a report or representation of things or events. It is an attempt to model a particular experience and transmit the form of that model to another.
c) In language representational process involves the combination of a finite number of discrete units to generate a potentially infinite set of statements about experience (the referent).
g) Language can be analysed into syntactic, semantic and pragmatic processes.

Collaborative works via the way of communications, attempts to install the common language, represents the essence of cultures (interactive and interrelated).

A. Language and Architecture:

Dominic Shu Valle declares that; The most important property of our intellectual, well and awareness treatments, that distinguish us from other organisms, which formed as a result of our use of language, depend on causality and logic, that located in the core of architectural idea.

The causal, logical and mathematical thinking depends on serial treatment, so the architect putted in a sequential line of ideas, as is the speaker series ideas to reach the intent or content or as known as: (speaking binder – conclusion –).

Or as (Al-thuwaini) claimed; [7] Architecture like Language can be analysed into syntactic, semantic and pragmatic processes.

Syntactic constraints on architecture are, like written language, fairly easy to observe in the expected/unexpected relationships between stylistically familiar elements. So too, in many cases it is fairly easy to understand the architect’s semantic intentions behind the composition of the forms of the building.

In other words the building can be analysed in semantic, pragmatic and syntactic terms.

B. The Language of Architecture:

In similarities between language and architecture, Alex Brown saw that, the similarity may sometimes be extended to noting that both systems use vocabularies of elements organized by some kind of syntax or grammar. However there is usually an implication that any similarity between them is no more than a sometimes useful but ultimately superficial coincidence.

Due to Al-Thuwaini architectural processes fit into the scheme of language as following: [7]

i. Any statement in a language has a referent. It is always talking about something (event or thing). The referent in architecture is (institution, client or program) which is being represented.

ii. Language uses discrete elements (words, for instance) combined in certain legitimate ways (syntactic rules) to represent its referent. For architecture those discrete elements are architectural forms or compositional techniques selected from the current typical set of a style (the vocabulary).

In architecture, syntax involves the conventional ways of combining architectural elements, conventions which by definition are derived from past experience.

iii. Elements are combined to define the function and relationships of the referent institution. Using the forms at its disposal and constrained by the prevailing rules of syntax architecture makes a metaphor of the institution; a metaphor in built form. That is, a form which represents the elements and relations of the institution.

iv. As a message, the building is a report about the ‘state of things’ in the referent institution in a particular context, namely this time and this place.
According to Richard Rogers [8], the architect’s main objective is to create spaces where people live their own story. Designing involves understanding the particular language that architecture speaks, together with the aim of placing each piece in harmony with its surroundings. The result is a formal, visual and functional narration which is told in every space.

There has to be a balance (functional and aesthetic) balance. There has to be a (rhythm), a language and it has to work. And that is architecture, if it isn’t, you are a sculpture.

So, architecture as a communication mediation, always attempts to convey the cultures values by statements (building elements), which currently might be the (reference). This reference in the era of investment, represent the (institution, client or program).

C. Architecture as Networks of Communication;
Mechanisms of interactions:

Due to Al-Thuwaini architectural processes fit into the scheme of language as following:
– Language is a system of communication, a report or representation of things or events between sender and receiver. Architecture communicates reports or represents the organization of an institution (client, program) in a particular place and time (the context: location, finance, technology, etc).

In other words a building is a report or representation of the functions and relationships within an institution and the immediate context within which the institution will be materialized. That is the concrete reality of designing buildings [7].

Alex Brown states that: the communication and exchange between architects takes place through a process of mutual selection and combination of the forms available in many individual works. This continuous sharing of experience involves the selection of real and observable elements drawn from other people’s work and combined in new contexts [9] . These elements are the means of communication within the system.

So he determined that, these network of exchanges taking place within a defined environment leads to an increasing similarity of form within the architectural system based on the most typical or essential aspects of the exchanged elements. This similarity is the basis of the stylistic paradigms which emerge as representative models of collective experience and which act as constraints on future selections.[9]

Gyula and Pollington 2003 in their book; ‘New architecture and technology’ clarified the nature of relationships occurred in this network of communication, when they described that [10].

However, increased communication (connectivity) between diverse groups by means of new technologies, trade, cultural exchange, voluntary integration or imperial acquisition establish the basis for the integration of architecture around a single style. The various elements of the original paradigms are selected and exchanged in terms of their fundamental similarities and differences.

The specific mechanism by which these external relations are mapped on to architecture is the system of patronage in existence at the time which reflects the number and relative power of the institutions within a society. This can be precisely defined as the institutions or individuals who have the economic power to commission buildings. The motivating force and the very existence of architecture depends entirely on the production of buildings. These are the social and economic relationships of the time realized in built form and represent the varying degrees of economic power of different institutions. A power which is realized in the large concentrations of capital required to build buildings [10].

The normal communication and exchange between architects within a defined geographical environment, which results in the collective production of typical sets of stylistic forms, involves mutual selection and combination of forms.

The same collective processes acting in an INTEGRATED environment will produce an increasing convergence in the characteristics of different styles within architecture. This may be called the Developmental or Paradigmatic state where the interchange and combination of elements underlying different styles results in the formation of a predominant style or -Meta style-.

The continuity of the Integrated state leads to ultra-stable environmental conditions where the same systemic processes produce entirely different and apparently contradictory end results, namely the fragmentation of the - Meta-style- itself [10].

From the above one can summarize the effects of the (system of patronage) on architecture as follows:
- Integrated systems of patronage reinforce the tendency of architectural activity to produce uniformity of style.

V. ARCHITECTURE AND TECHNOLOGY

Technology considered as one of the architecture keystone which is contributed in changing and developing the formal and expressive side of architecture, where new types and forms created, due to new materials and construction methods, which raised a lot of controversy and problematic dialectics at vocational, educational and cultural level as identity, privacy, originality, heritage and contemporary modernity, so the architectural and vocational thoughts were varied in understanding these concepts and methods of their application in the contemporary local architecture.

Al-Chadirchi sees architecture in the point view of technology, describing as an interacting process of needs (social needs), thoughts and technology. The pragmatic social needs leads to emerge the new form. It means that, the architectural form is the outcome of the interaction between the social needs and technology [11, P.89].

Al-Chadirchi determined the 3 sides of technology in architecture: (the materials objective nature, the scientific exploring for the objective nature of materials, producing by human knowledge to be linked with social pragmatic) [11, p. 148].

It means, if there are the social needs to producing the new forms, it should be the new technology too. This process should be completed by methods of having knowledge to new materials and their potentialities. So, technology has been seen as the character of the contemporary era.

William Porter sees that, the Centre Pompidou in Paris projects technology in a variety of ways that are much more complex. Severely functional to the point of exaggeration in its mechanical service systems, it does not pick up cornices, arcades or other features of building in the area.

Besides of this, the grid is as characteristic of how architects and artists have projected technology in modern times. The grid has been a much used figure of the avant-garde. "The absolute stasis of the grid, its lack of hierarchy, of center, of inflection, emphasizes not only its anti-referential character, but — more importantly — its hostility to narrative. By denying the possibility of signifying other architectures, times, cultures, and human events, the grid turned attention to the means of the building's own making — its technology — which, in turn, could then signify modern technology in general [11].

For Gyula, the 'new architecture' makes use of new geometric and amorphous shapes, new concepts and proportions, measure, colour, lighting and technological aspects [10 P.9].

But David, sees that, technological power manifests in two ways: in the space-biased user technology which elevates the finished artefact over nature, and in the time-biased owner technology that resists change and degradation over time [3 P. 290].

UK Architects in their essay about relationships between architecture and technology, confirmed that:

New materials and structures are created and evolved everywhere. These advancements have made architects become so attached with visual appearance. Meanings that majority of them concentrate on using technology in order to discover new forms and shapes for architecture in order to reflects the idea for which it was designed. The design of the buildings that focused on visual aesthetics has led to a trend of creating a form that looks good rather than a space that feels good.

With this trend continues, it seems that the role of visual sense has being privileged when compared to other human senses. The impact of this trend causes the design of the current architecture being reduced and restricted into the visual experience. With the absence of other senses, the strength of interaction that effects on our bodies with a space is being diminished. This indicates that the tendency of architecture of image rather than architecture of experience is increasing. The products of architecture of image will only offer visual consumption which won’t create lasting impressions that all the architects strive for [13].

Al-mousawi in impacts of new technology on architecture; said that:

The architectural composition will subjected to additional rules, differed from those, that have emerged in the era of the industrial revolution, such as; ratios, modules, typology and functionality. So the architectural composition will be freed from the rule of simple shapes [14].
So, new technologies capable to reshape the architecture via (new ideas, new ways of productions, and new appearances too).

A. Architecture and the notion of form: aspects from the past:

As of the beginning of the historical process, the widely-known forms such as square, circle and triangular were being used and again widely-known architectural forms were being obtained from them such as arch, dome and vault (Fig.2). The search of pure architectural form performed with basic geometrical forms has led the designer to the similar designs for a long time.

In the twentieth century, form began to abandon the realm of mind. The meaning of form that the notion of structure conveys is more methodological than epistemological. In this period of time, as a design methodologist, Alexander suggested a mathematically based design process. Eisenman also attempted to get rid of form and type (the preconceived image). From this point of view, he proposed a view of design as a transformation process derived from the generative grammar of Chomsky. The intention of Eisenman's theories is more aesthetic than scientific. The forms of his buildings evoke the aesthetic of the Modern Movement [15 P.31].

All the architects of the Modern Movement, from Mies to Corbusier and Wright, approached space as a logical condition in which geometry, generic volumes, and accommodated functions occurred through integral interrelationships, by complementing and respecting the integrity of each other. Solids were respecting solids, functional areas were respecting functional areas, and none were intruding into another without following the rules suggested by the geometric order that is the rules of the game [14 P. 45-46].

In our day’s approaches, trial-and-error methods have been used by utilizing from all possibilities of technology anymore; the acquired forms and the forms that are derivatives of these have become discussable geometries as going outside of being known. Thus, forms and formats acquired partly through random trials without any search of basic geometrical form go beyond the accustomed one [15].(Fig. no. 3).

B. Reading the Architectural Form:

Form in architecture is not merely related to space and the activity occurring within this space. Form is also a vehicle for meaning or a sign. Apart from that architectural form is also related to the elements themselves; their arrangements, and combination with each other (syntax); the meaning (semiotics); and the effects on people (pragmatics).

In the formal design, there are two sets of elements:
- the conceptual elements (point, line, plane, and volume)
- the visual elements (shape size, color, texture, etc.)

Conceptual elements do not exist physically, but are perceived as being present. Visual elements can be seen, and constitute the final appearance of a design [16 P.47].

In architectural theories these fundamental elements (conceptual and visual) shows many different attitudes, which are varied from rea to era, from architect to another, in the end all together shaped theories of architecture, starting from classical theories, to modern, post-modern, structuralism and post structuralism theories…

a. Conceptual elements of architectural form:

On every stage of design, design strategies play an important role for a better improvement of the concept of “whole”. It helps in arranging elements one by one or one to one as well as considering their relations with whole. It also gives a contribution on arrangements of basic geometrical elements, which encompass the use of space and form.
- Unity: all of the elements on the visual plane appear to be one cohesive unit.
- Balance: when visual weight is distributed evenly.
- Contrast: the opposite of unity, contrast is achieved through differences in elements.
- Harmony: the blend of unity, contrast is achieved in a pleasing visual whole.
- Rhythm: the tempo of a visual piece.
- Proportion: one element in relation to another [16 P. 62].
  - Elements are separated.
  - Elements are linked.
  - Elements are adjacent.
  - Elements are Interrelated (interlocking and interpenetrating), [16 P.75].

These fundamental basics formed the composition rules in evolution of architecture from the early historical periods since the ending of modern architecture and raising new trends named as post- modern architecture, which are the most of them still followed by new architecture approaches too.
b. Visual elements of Architectural forms

Three-dimensional forms are seen differently from different angles and distances, under different lighting conditions and in different color or texture. It can be considered that the following elements to be independent of such variable situations: (Shape – Texture – Light – color – size and scale) [16 P. 55].

Schulz in analysis of architectural form said that form is based on a description of the basic elements of shape and relationships [17].

Due to Bonta; the formal properties of any item to be material (physical) and abstract, these properties is a system of relations between elements of shape [17].

Mitchell also said that to determine the properties of form, must know the relationships between the parts of the shape, and the relationship of the parts with all, any interpretation of any form is by specifying the shape elements and parts and relationships [17].

Clark said that analyses of the formal characteristics of the building are key elements to focus on the relationship between them. Relationships to be analysed are:
- Relations between the part and the whole.
- Relationship of the repeated elements with individual.
- Relationship of symmetry and balance to the elements.
- Relationship of addition and subtraction.
- Relationship of gradient.

Also Ching’s study dealt with the basic elements of shape and the relationship between them that determines the final form of the building, the study has identified a set of visual properties of architectural elements, namely, color, size, shape, orientation, position ... Etc [17 P. 208].

At last, Yilmaz also confirmed that the Form cannot simplify be reduced to the single of choice of elements and their arrangement. Neither can form be seen purely as a vehicle of meaning. For that reason it is possible to appraise the architectural form within the framework of three categories:
- Space-defining element (related to use)
- A sign (related to arrangement, significance and effect)
- Structure (dependent on the laws of static and the strength of materials). [16 P.22]

As a result the analyzing of form, depended on:
- How it formed? (Syntax).
- How it produced? (Construction and materials)
- How it read? (Semantic).
- How it affected on people? (pragmatic).

VI. CASE-STUDIES:

In general evolution refers to the formation and continued growth and expansion, and patterns that turn to a series of moves generating concepts of emerging, emanating, and raising.

So, the evolution of architecture will be (the cumulative effect of all the cultural systems which architecture represents in built form within a given society).

In previous sections, the study declared that the technology transfer has been reflected on the (thought, design process, building production, and appearances) of architecture. Accordingly the formal language has been changed too. The formal, visual and functions of the language had also via several items expected to be changed, according to certain mechanism of assessment, which its indicators explored in (Table no.1).

The following selected projects which represents executed investment projects -in one hand-, and includes the process of technology transfers in various building types -in the other hand-, proposed to demonstrate the evolution in local architecture in Sulaimanyia city, also they have been the icons of the city in the recent years.

- Grand Millennium 5 star Hotel-Recreational- Table no.3, (Fig. No. 3).
- The American University, Educational-Table no.3, (Fig. No. 4).
- Faruq Medical city, Health care-Table no.3, (Fig. No. 5).
- Art Palace, Cultural-Table no.3, (Fig. No. 6).
- Lana city -under construction-, Housing-Table no.3, (Fig. No. 7).

Effects in the certain items (table no.1) took in to the consideration, and levels and values are gained due to questionnaire divided over (9 Architects) who had more experience, specialists, and more professional in the field of architecture in the city. (table no, 2)

VII. THE RESULTS:
The results recorded that all selected projects (affected) on the changing of the formal language of local contemporary architecture (in varied and relative degrees), (Table no.2), due to their affects in syntactic, producing, semantic and pragmatic issues, (Table no.4A, Table no.4B), which represents the overall components of the formal language vocabularies.

As concern to semiotic affects, the study took (the meanings of society and culture) a part from the assessment because it was contradicted with the other component (Functional and relationships of (institution, client, and program). –in the one hand-, and the results show that most of the projects failed to gain the acceptance level (except the art palace –project no. 4-) to achieve this goal –in the other hand-.

The relationship between the results and the system of patronage show that the governmental patronage has been tried to translate the culture and society meanings in order to identify the local identity in architecture rather more than the private and individual patronage, whose their main intensions have been focused in exaggeration the power of their institution.

In this regard and because of the technology transfer process affirmed that the localization (local identity) came after transferring the technological vocabularies and lead to innovation in architecture. So our situation in the process of technology transfer is in its beginnings.

VIII. DISCUSSION:

After the results (representation and analyzing Tables 1-2-4A-4B), the study find that the investment in real estate and architecture in the local level will effect on changing the formal language of local architecture, the effects are varied and in several levels. The process of changing may need time factor to reflect and penetrate all the architecture’s articulation.

The patronage system besides of the real estate investing has had the long arms affects in the process, because the (investor) –due to time factor, and his beneficiaries have been tried always to transfer the technology. However the process need to observed, monitored and governed by local authorities.

Now, the study capable to conclude the main and important points as following:

– Technology includes 4 main keystones: (knowledge-concept, material and technical).
– Investment (as a way) has been tried always to transfer the technologies in all sectors.
– Innovation in technology hasn’t been completed; if it didn’t arrive all its stages (transfer – localization – innovation).
– The very distinct effects of the technology transfer reflected on the visual or the appearances of architecture, so the formal language is exposed to this change,
– The formal language changing is distinguished by knowing the (syntactic, how the architecture is produced, semiotic, and its pragmatic) effects.
– The changing process will arrive the level of (evolution of architecture) –at the end-, that is when the technology has changed to the (innovation technology), and –of course- this will be done when the stages of the process have been completed.
– Architecture represent the institution’s message or (client – program). The system of patronage had have the important role in this process, So the efforts will be focused on translating the meanings and values of the local communities and their culture too.
– All the process of technology transfer, accordingly the evolution of the formal language in the local architecture need (the communication, expression and thoughts) between local architects with other (via investment and technology transfer process), in the higher and more integrative level, in order to forming (style, integrated, and finally –styles-, arriving the condition called no-style) in local contemporary architecture. So, architecture as system of communication, and by architect(s) collaboration in producing the collective products, acts on emerging the set of styles by the phenomenon od (fragmentation), at the end (multi-styles or no-style) form will dominated in local architecture.
– When architecture has moved on to another level. So, by using the modern technology, not only to grasped the visual aesthetics that has become a trends nowadays, but also to craft the experience that has been the nature and value of architecture since the early days. This will affects the human physically and psychologically and will pushed the architecture to the full potential.

IX. CONCLUSIONS:
REFERENCES:


[7] الديويني، د. علي “اللغة و العمارة”


Table no. (1) The formal language evolution of local contemporary architecture, (Assessment mechanism) (by: Researcher)

<table>
<thead>
<tr>
<th>The main issue</th>
<th>The secondary issues</th>
<th>The derived indicators</th>
<th>Achieved Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Affected Strongly</td>
</tr>
<tr>
<td></td>
<td>How it formed? (Syntax)</td>
<td>Release the form from the classical rules and values.</td>
<td></td>
</tr>
<tr>
<td>The Formal Language of Architecture</td>
<td></td>
<td>New structure.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it produced?</td>
<td>New construction.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it produced?</td>
<td>New details.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it read? (Semiotic)</td>
<td>The meanings of society and culture.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it read? (Semiotic)</td>
<td>Functional and relationships of institution, client, and program</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it affected? (Pragmatic)</td>
<td>Exaggeration.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it affected? (Pragmatic)</td>
<td>New concepts. New relationships</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How it affected? (Pragmatic)</td>
<td>Metaphor, Amorphous shapes</td>
<td></td>
</tr>
</tbody>
</table>

Table no. (2) Assessment results for the five selected projects with the relationship with the system of patronage (By: the researcher)

<table>
<thead>
<tr>
<th>Project No.</th>
<th>Patronage system</th>
<th>Projects Assessment (From table 1)</th>
<th>Notes (location in sequence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proj. No. 1 (Grand Millennium) 5 star Hotel</td>
<td>![individual] ![institution]</td>
<td>Affected (Strongly)</td>
<td>(1)</td>
</tr>
<tr>
<td>Proj. No. 2 (The American University)</td>
<td>![individual]</td>
<td>Affected (Strongly)</td>
<td>(3)</td>
</tr>
<tr>
<td>Proj. No.3 (Faruq Medical city)</td>
<td>![individual] ![government]</td>
<td>Affected (Strongly)</td>
<td>(5)</td>
</tr>
<tr>
<td>Proj. No.4 (Art Palace)</td>
<td>![individual]</td>
<td>Affected (Good)</td>
<td>(4)</td>
</tr>
<tr>
<td>Proj. No.5 (Lana city)</td>
<td>![individual]</td>
<td>Affected (Strongly)</td>
<td>(2)</td>
</tr>
</tbody>
</table>
Figure no.(1) The overall view Outline for the evolution in contemporary local architecture via investment and technology transfer. (by: the Researcher)

Figure no. (2) Designs with Basic Geometrical Forms Pyramids of Giza/Egypt, Parthenon/Greek, Colosseum/Rome [14]

Figure no. (3) Designs with Free Forms [14]
Frank Gehry: Guggenheim Museum, Daniel Libeskind: Royal Ontario Museum, Zaha Hadid: Pierresvives Montpellier
Table no.(3). Figures no. (3 - 4 - 5 - 6 - 7) The local investment Projects

Fig. no.(3). Project No. 1 The Grand Millennium 5 Stars Hotel [Link](http://www.wikiwand.com/en/Sulaymaniyah)

Fig. no.(4). Project No. 2 The American University [Link](https://youtu.be/i-buU7Ho6Y?time=647)

Fig. no.(5). Project No. 3 Faruq Medical city [Link](http://www.farukholding.com/market/)

Fig. no.(6). Project No. 4 Art Palace [Link](http://www.wikiwand.com/en/Sulaymaniyah)

Fig. no.(7). Project No. 5 Lana city [Link](https://www.facebook.com/daniacity/photos/)
Table No. (4-A) Assessment values for formal language presentations (by: Researcher)

<table>
<thead>
<tr>
<th>Project No.1</th>
<th>Grand Millinum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Values</td>
<td>1=Syntactic 2=Produced 3=Semanic 4=Pragmatic</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>80</td>
<td>70</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.2</th>
<th>The American University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Values</td>
<td>1=Syntactic 2=Produced 3=Semanic 4=Pragmatic</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>90</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.3</th>
<th>Faruq Medical City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Values</td>
<td>1=Syntactic 2=Produced 3=Semanic 4=Pragmatic</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>40</td>
<td>80</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.4</th>
<th>Art Palace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Values</td>
<td>1=Syntactic 2=Produced 3=Semanic 4=Pragmatic</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>70</td>
<td>60</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project No.5</th>
<th>Lana City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Values</td>
<td>1=Syntactic 2=Produced 3=Semanic 4=Pragmatic</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>60</td>
<td>80</td>
</tr>
</tbody>
</table>

Formal Language Assessment Projects Comparations
1=Grand Millinum 5 stars Hotel 2=The American Univ. 3=Faruq M. city 4=Art Palace 5=Lana city

Sum. Values Assessments
1=Grand Millinum 5 stars Hotel 2=The American Univ. 3=Faruq M. city 4=Art Palace 5=Lana city
Table No.4-B Formal Language components Assessments for all projects (By: Researcher)

**Syntax assessment values**
1=Grand Millinum Project  2=The American Univer.
3=Faruq Medical city  4=Art Palace  5=Lana city

**Production Assessment Values**
1= Grand Mill. Hotel  2= The American Univ.
3=Faruq Medical City  4=Art Palace  5=Lana City

**Semantic Assessment Values**
1= Grand Mill. Hotel  2= The American Univ.
3=Faruq Medical City  4=Art Palace  5=Lana City

**Pragmatic Assessment Values**
1=Grand Mill.  2=The American Univ.
3=Faruq Med. City  4=Art Palace  5=Lana city

**Formal Language Vocabularies Assessments for All projects**
1= Grand Mill. Hotel  2= The American Univ.
3=Faruq Medical City  4=Art Palace  5=Lana City